Appendix E - The *df*Err Needed for *Power* = .80 (*Alpha* = 0.05) in Tests of Traditional Null Hypothesis

|  |  | *df*Hyp |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| *PV* | *d* | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 12 | 15 | 20 | 30 | 40 | 60 | 120 |
| .01 | 0.20 | 775 | 952 | 1072 | 1165 | 1260 | 1331 | 1394 | 1451 | 1504 | 1580 | 1670 | 1825 | 1992 | 2302 | 2565 | 3027 | 4016 |
| .02 | 0.29 | 385 | 473 | 533 | 579 | 627 | 662 | 694 | 722 | 762 | 787 | 832 | 909 | 993 | 1176 | 1313 | 1413 | 2010 |
| .03 | 0.35 | 255 | 313 | 353 | 384 | 416 | 439 | 460 | 479 | 505 | 522 | 552 | 603 | 660 | 782 | 874 | 1008 | 1341 |
| .04 | 0.41 | 190 | 233 | 263 | 286 | 310 | 328 | 343 | 358 | 377 | 390 | 413 | 451 | 494 | 585 | 654 | 774 | 1031 |
| .05 | 0.46 | 151 | 186 | 209 | 228 | 247 | 261 | 273 | 285 | 300 | 310 | 329 | 359 | 402 | 466 | 522 | 618 | 825 |
| .06 | 0.51 | 125 | 154 | 173 | 189 | 204 | 216 | 227 | 236 | 249 | 257 | 273 | 298 | 333 | 388 | 434 | 514 | 687 |
| .07 | 0.55 | 106 | 131 | 148 | 161 | 174 | 184 | 193 | 204 | 212 | 220 | 233 | 255 | 285 | 331 | 371 | 440 | 601 |
| .08 | 0.59 | 92 | 114 | 128 | 140 | 152 | 160 | 168 | 178 | 185 | 191 | 203 | 222 | 248 | 289 | 324 | 384 | 525 |
| .09 | 0.60 | 81 | 100 | 113 | 124 | 134 | 142 | 149 | 157 | 164 | 169 | 179 | 196 | 220 | 256 | 287 | 341 | 466 |
| .10 | 0.67 | 73 | 90 | 101 | 110 | 120 | 127 | 133 | 141 | 146 | 152 | 161 | 176 | 197 | 230 | 258 | 312 | 419 |
| .11 | 0.70 | 66 | 81 | 91 | 101 | 108 | 115 | 120 | 127 | 132 | 137 | 148 | 159 | 178 | 208 | 238 | 283 | 388 |
| .12 | 0.74 | 60 | 74 | 83 | 92 | 99 | 104 | 110 | 116 | 121 | 125 | 135 | 145 | 163 | 190 | 218 | 259 | 355 |
| .13 | 0.77 | 55 | 68 | 76 | 84 | 90 | 96 | 101 | 106 | 111 | 115 | 124 | 133 | 150 | 178 | 200 | 238 | 327 |
| .14 | 0.81 | 50 | 62 | 70 | 78 | 83 | 88 | 94 | 98 | 102 | 106 | 114 | 123 | 138 | 165 | 185 | 220 | 302 |
| .15 | 0.84 | 47 | 58 | 65 | 72 | 77 | 82 | 87 | 91 | 95 | 98 | 106 | 115 | 129 | 153 | 172 | 205 | 286 |
| .16 | 0.87 | 43 | 54 | 61 | 67 | 72 | 76 | 81 | 85 | 88 | 92 | 99 | 107 | 120 | 143 | 161 | 192 | 268 |
| .17 | 0.91 | 40 | 50 | 57 | 63 | 68 | 72 | 76 | 80 | 83 | 86 | 93 | 101 | 112 | 134 | 151 | 183 | 251 |
| .18 | 0.94 | 38 | 47 | 53 | 59 | 63 | 67 | 71 | 75 | 78 | 81 | 87 | 96 | 106 | 126 | 142 | 172 | 236 |
| .19 | 0.97 | 36 | 44 | 50 | 55 | 59 | 63 | 67 | 70 | 73 | 77 | 82 | 90 | 101 | 119 | 136 | 163 | 227 |
| .20 | 1.00 | 34 | 42 | 47 | 52 | 56 | 60 | 64 | 67 | 69 | 73 | 77 | 85 | 96 | 112 | 129 | 154 | 214 |
| .22 | 1.06 | 30 | 37 | 42 | 47 | 51 | 54 | 57 | 60 | 62 | 65 | 70 | 76 | 86 | 102 | 116 | 139 | 194 |
| .24 | 1.12 | 27 | 34 | 39 | 42 | 46 | 49 | 52 | 54 | 57 | 59 | 63 | 69 | 78 | 93 | 105 | 128 | 178 |
| .26 | 1.19 | 25 | 31 | 35 | 38 | 42 | 44 | 47 | 49 | 52 | 54 | 58 | 63 | 71 | 85 | 96 | 117 | 163 |
| .28 | 1.25 | 22 | 28 | 32 | 35 | 38 | 41 | 43 | 45 | 48 | 49 | 53 | 58 | 65 | 78 | 90 | 107 | 152 |
| .30 | 1.31 | 21 | 26 | 30 | 32 | 35 | 37 | 40 | 42 | 44 | 45 | 49 | 53 | 61 | 72 | 83 | 100 | 142 |
| .32 | 1.37 | 19 | 24 | 27 | 30 | 33 | 35 | 37 | 39 | 40 | 42 | 45 | 50 | 56 | 68 | 76 | 93 | 131 |
| .34 | 1.44 | 18 | 22 | 25 | 28 | 30 | 32 | 34 | 36 | 38 | 39 | 42 | 46 | 52 | 63 | 72 | 87 | 123 |
| .36 | 1.50 | 16 | 20 | 23 | 26 | 28 | 30 | 32 | 33 | 35 | 37 | 39 | 43 | 49 | 59 | 67 | 81 | 115 |
| .38 | 1.57 | 15 | 19 | 22 | 24 | 26 | 28 | 30 | 31 | 33 | 34 | 37 | 40 | 45 | 55 | 62 | 76 | 108 |
| .40 | 1.63 | 14 | 18 | 20 | 23 | 24 | 26 | 28 | 29 | 31 | 32 | 35 | 38 | 43 | 52 | 59 | 72 | 101 |
| .42 | 1.70 | 13 | 17 | 19 | 20 | 23 | 24 | 26 | 27 | 29 | 30 | 32 | 36 | 40 | 48 | 55 | 67 | 96 |
| .44 | 1.77 | 12 | 15 | 18 | 20 | 21 | 23 | 24 | 26 | 27 | 28 | 30 | 33 | 38 | 45 | 52 | 64 | 91 |
| .46 | 1.85 | 12 | 14 | 17 | 19 | 20 | 22 | 23 | 24 | 25 | 26 | 29 | 31 | 35 | 43 | 49 | 60 | 85 |
| .48 | 1.92 | 11 | 14 | 16 | 18 | 19 | 20 | 22 | 23 | 24 | 25 | 27 | 30 | 34 | 40 | 46 | 57 | 81 |
| .50 | 2.00 | 10 | 13 | 15 | 16 | 18 | 19 | 20 | 21 | 22 | 24 | 25 | 28 | 32 | 38 | 44 | 54 | 76 |
| .60 | 2.45 | 8 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 21 | 24 | 29 | 33 | 41 | 58 |
| .70 | 3.06 | 6 | 7 | 8 | 9 | 10 | 11 | 11 | 12 | 13 | 13 | 15 | 16 | 18 | 22 | 25 | 30 | 44 |